

## Memorandum

U.S. Department of Transportation  
Federal Aviation Administration

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Subject:	<b>ACTION:</b> Policy for Approval of One Engine Inoperative (OEI) Ratings for Engines with Multiple Turbomachinery Power Sources	Date:	
From:	Manager, Engine and Propeller Directorate Aircraft Certification Service	Reply to Attn. of:	Chung Hsieh, ANE-110 (781) 238-7115
To:	Manager, Aircraft Engineering Division, AIR-100 Manager, Aircraft Manufacturing Division, AIR-200 Manager, Brussels Aircraft Certification Staff, AEU-100 Manager, Engine Certification Office, ANE-140 Manager, Engine Certification Branch, ANE-141 Manager, Engine Certification Branch, ANE-142 Manager, Boston Aircraft Certification Office, ANE-150 Manager, New York Aircraft Certification Office, ANE-170 Manager, Airframe and Propulsion Branch, ANE-171 Manager, Rotorcraft Directorate, ASW-100 Manager, Rotorcraft Standards Staff, ASW-110 Manager, Airplane Certification Office, ASW-150 Manager, Rotorcraft Certification Office, ASW-170 Manager, Special Certification Office, ASW-190 Manager, Small Airplane Directorate, ACE-100 Manager, Small Airplane Standards Office, ACE-110 Manager, Atlanta Aircraft Certification Office, ACE-115A Manager, Propulsion Branch, ACE-140A Manager, Chicago Aircraft Certification Office, ACE-115C Manager, Propulsion Branch, ACE-118C Manager, Wichita Aircraft Certification Office, ACE-115W Manager, Propulsion Branch, ACE-140W Manager, Anchorage Aircraft Certification Office, ACE-115N Manager, Transport Airplane Directorate, ANM-100 Manager, Transport Standards Staff, ANM-110 Manager, Airframe and Propulsion Branch, ANM-112 Manager, Seattle Aircraft Certification Office, ANM-100S Manager, Propulsion Branch, ANM-140S Manager, Denver Aircraft Certification Office, ANM-100D Manager, Los Angeles Aircraft Certification Office, ANM-100L Manager, Propulsion Branch, ANM-140L	Policy No.	2000-33.7-RO

This policy memorandum provides policy and guidance for compliance to § 33.7 for one-engine-inoperative (OEI) ratings for the rotorcraft engine that incorporates more than one turbomachinery power source within the engine. These engines must be intended for installation on multiengine rotorcraft. Section 33.7 of Title 14 of the Code of Federal Regulations (14 CFR) establishes engine ratings and operating limitations, however, the use of one power section inoperative power for this design configuration is not explicitly defined in § 33.7(c)(1)(v) through (ix) and § 1.1. The intent of this policy memorandum is to establish a standardized approach for the approval and use of one power section OEI ratings for rotorcraft engines of

this design. This standardized approach will assist Aircraft Certification Offices in the evaluation of applicant engine rating structure and engine certification.

An engine that comprises more than one turbomachinery power sections is defined as a multi-pack propulsion system in which multiple power sections are combined through a common gearbox to drive a single shaft. Such an engine may consist of two identical power sections (or free-turbine turboshaft engine equivalent) that are coupled to a common mixing gearbox with a single output shaft. The drive system of the engine normally includes a pair of clutches that prevents the output shaft from driving the power section input shaft and allows either power section to drive the output shaft if the other power section fails. Because of this unique one power section inoperative power design feature, such an engine may be considered for multiengine rotorcraft application with OEI ratings. However, this finding can only be made at the rotorcraft level. The engine applicant should coordinate this in advance with the installer and rotorcraft certification office.

1. The approved one power section inoperative power must be selected by the applicant and be identified as the rated one power section OEI power in the engine type certificate.
2. All provisions of airworthiness standards for rated OEI powers prescribed in part 33 are applicable to one power section OEI powers and must be complied with for engine certification.
3. The airworthiness standards for one power section OEI powers prescribed in rotorcraft regulations for the engine installation must be complied with separately. Any inquiries regarding engine ratings and operating limitations should be directed to the Engine and Propeller Standards Staff, Engine and Propeller Directorate.

Original Signed by:  
Jay J. Pardee, Manager  
Engine and Propeller Directorate  
Aircraft Certification Service